Eur J Orthod. 1993 Apr;15(2):107-14.

Head posture in obstructive sleep apnoea.

Solow B, **Ovesen J**, **Nielsen PW**, **Wildschiødtz G**, **Tallgren A**.

Orthodontic Department, School of Dentistry, University of Copenhagen, Denmark.

In growing subjects, obstruction of the upper airway may lead to excessive vertical facial development. According to the soft-tissue stretching hypothesis (Solow and Kreiborg, 1977) this could be due to an increased cranio-cervical angulation triggered by the airway obstruction. The present study aimed to examine the effect of airway obstruction on cranio-cervical posture in a sample of adult patients with severe obstructive sleep apnoea (OSA). Lateral cephalometric radiographs taken in the natural head position (mirror position) were obtained from 50 male patients aged 28-70 with polysomnographic diagnosis of obstructive sleep apnoea. The Apnoea Index ranged from 21 to 98 episodes per hour with a mean of 54.6. Control samples were available from previous cephalometric studies of head posture in five samples of healthy subjects and one sample of congenitally blind subjects. The average cranio-cervical angle, NSL/OPT, was found to be extremely large (mean 104.1, SD 9.1) exceeding the average values in the control samples by 1-2 standard deviations ($P < 0.001$). It is suggested that the large cranio-cervical angle in OSA patients is a physiological adaptation aiming to maintain airway adequacy while the head, and thus the visual axis, is kept in its natural relationship to the true vertical. The findings thus provide evidence for the hypothesis that upper airway obstruction may trigger an increase in the cranio-cervical angulation.

PMID: 8500536 [PubMed - indexed for MEDLINE]